

DISSERTATION THESIS

A PROSPECTIVE OBSERVATIONAL STUDY “ TO ASSESS THE INCIDENCE OF MEDICATION ERRORS IN THE INPATIENT DEPARTMENT” OF THUMBAY HOSPITAL, HYDERABAD

**By :
POULAMI PAUL
MBA-HM 21
Academic Year, 2016-2018**

INTRODUCTION

- * Medication error has been defined as “any preventable event that may cause or lead to inappropriate medication use or patient harm, while the medication is in the control of health-care professional, patient or consumer. The error may be of commission or omission, with potentially negative consequences for the patient, which would have been judged wrongly by skilled and knowledgeable peers at the time it occurred, independent of whether there were any negative consequences. Medication errors can be broadly considered to be of three types: prescribing errors, dispensing errors and administration errors.

AIM & OBJECTIVE

AIM

TO REDUCE MEDICATION ERROR IN THE IN-PATIENT DEPARTMENT

OBJECTIVES

1. To assess the medication process of the hospital under study.
2. To study the medication error rate for the study period.
3. To identify the cause of medication error.
4. To suggest various measures to prevent medication error in further if any.

RESEARCH QUESTION

- * What are the reasons of medication error in in-patient department?
- * How many cases of medication error are present?

METHODOLOGY:

- * **STUDY SETTING** – THUMBAY Hospital, HYDERABAD.
- * **STUDY DURATION**- 3 months
- * **STUDY DESIGN** – Prospective Observational Study
- * **STUDY POPULATION** – Patients in the I.P.D.
Inclusion criteria : IPD , Exclusion Criteria : OPD
- * **SAMPLE SIZE** – 200
- * **SAMPLING METHOD** – Non-probability convenience sampling
- * **DATA COLLECTION** – Reviewing of Case Sheet and observing nursing staff.
- * **DATA ANALYSIS** – Using Microsoft Excel. Lean Sigma.

DATA DESCRIPTION

NATURE OF DATA:

- * Quantitative data collected through structured questionnaire checklist technique.

TYPE OF DATA:

- * Collection through direct observations.
- * Interacting with the nurses and the clinical pharmacist of this hospital.
- * Information obtained through organization records.
- * Information gathered through internet.

STUDY TECHNIQUE USED:

- * Structured Checklist is used. The scoring pattern is Yes and No.

STUDY TOOLS USED:

- * Structured Checklist.
- * Survey by visiting the inpatient wards.

PROBLEM STATEMENT

1. Lack Of Knowledge Among Nurses And Pharmacists regarding medication process.
2. Use of Short Names Instead Of Medicine Name by doctors.
3. Doctors Handwriting Is Illegible .
4. Unavailability Of Medicine in the pharmacy.
5. Lack Of Staffs In Pharmacy And Nursing department.
6. Dose Error By Doctors.
7. Patient Identification Not Done properly by nurses.

PROBLEM JUSTIFICATION

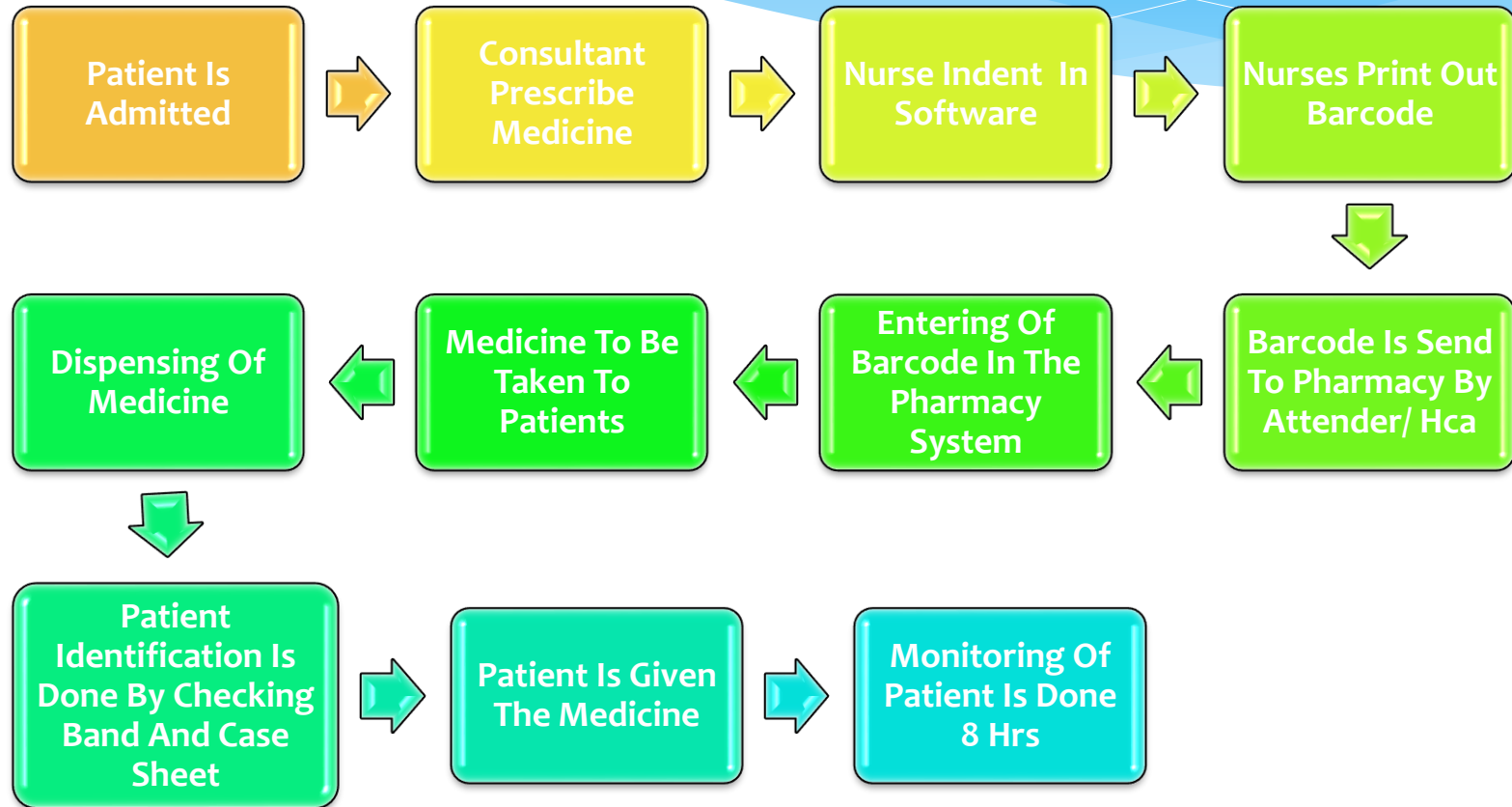
- * Re-Occurrence Of Prescription Error has A Negative Impact for the Hospital.
- * Rise Of Medication Error Reflects To Negligence, In-Adequate Knowledge, And Patient Harm Which Leads To Lack Of Good Service.

DMAIC

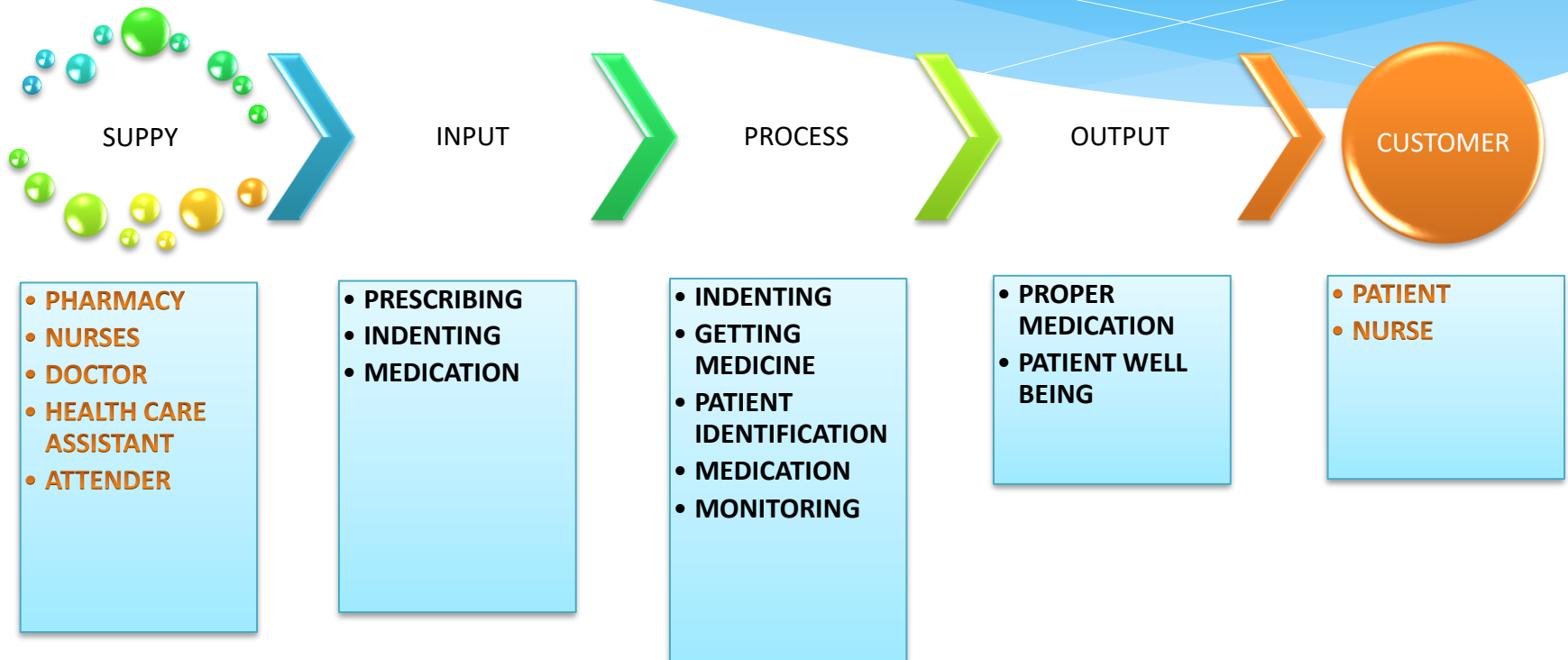
DEFINE PHASE

- * Lack Of Knowledge Among Nurses And Pharmacists
- * Use of Short Names Instead Of Medicine Name.
- * Doctors Handwriting Is Illegible
- * Unavailability Of Medicine
- * Lack Of Staffs In Pharmacy And Nurses
- * Dose Error By Doctors.
- * Patient Identification Not Done

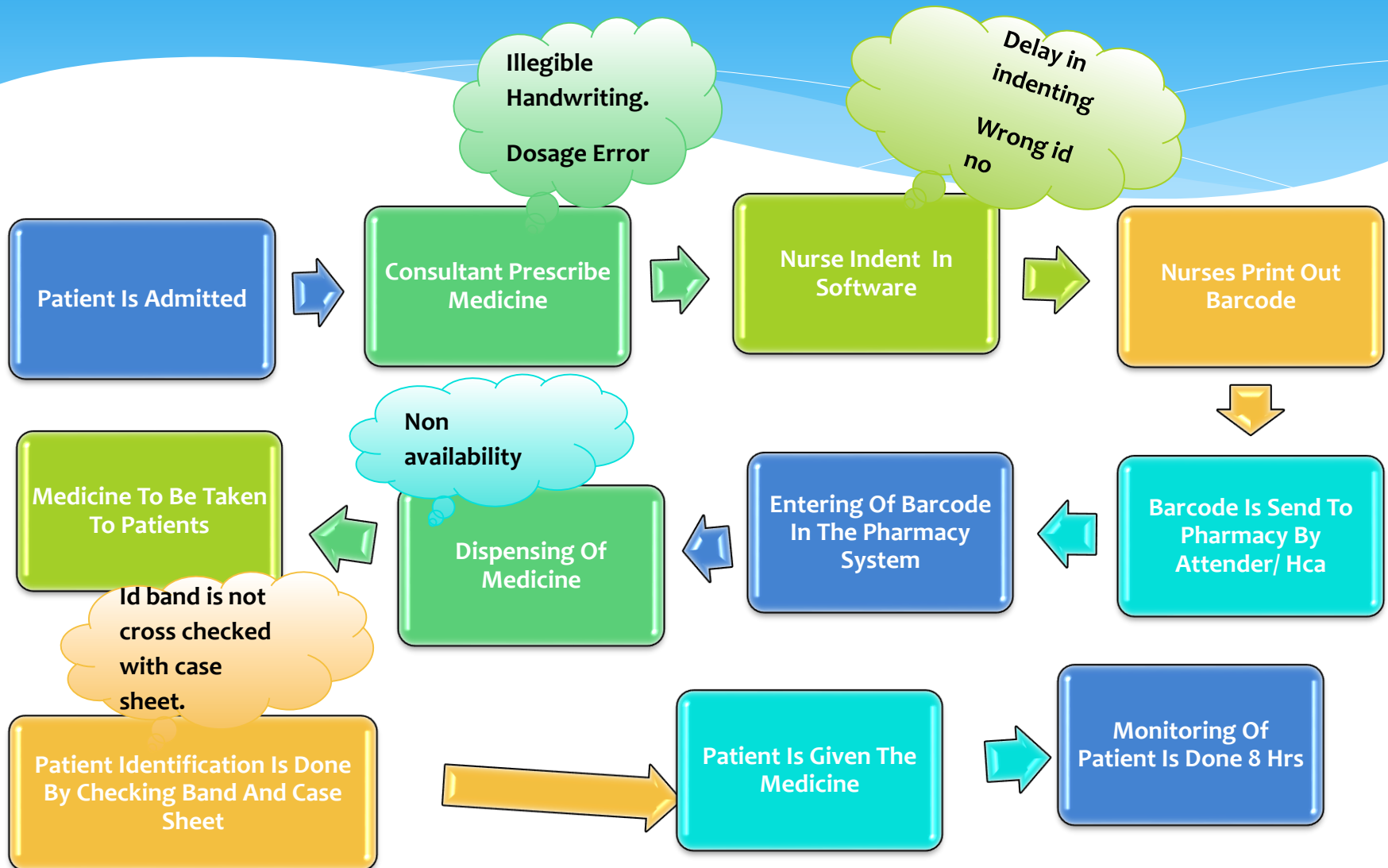
PROCESS FLOW



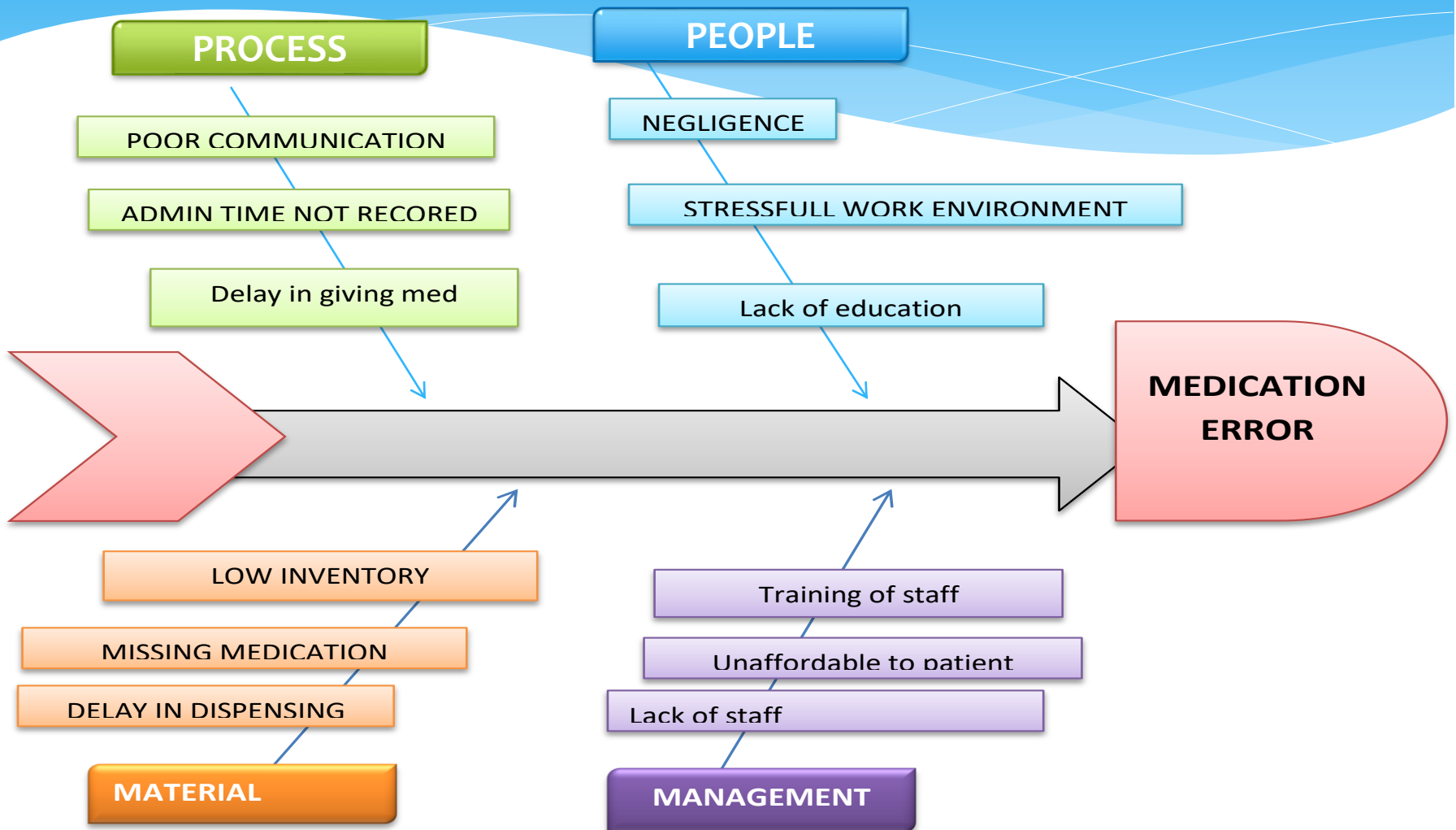
SIPOC



ROOT CAUSE ANALYSIS



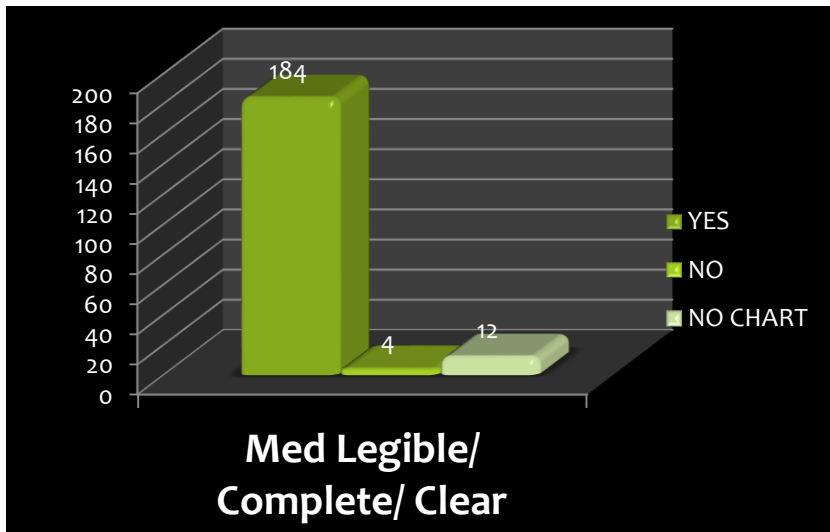
FISH BONE ANALYSIS



PROCESS WISE SYSTEM ERRORS

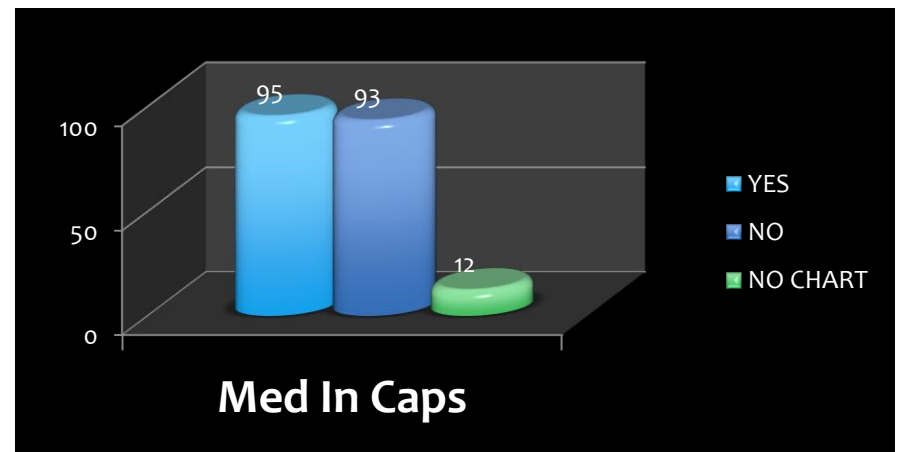
PROCESS	SYSTEM	PROBLEM IDENTIFIED
PRESCRIBING	Standard Order Sets On-Going Medication	Lack Of Awareness And Training Among Doctors
INDENTING	Computerized System Online Indenting With Barcode	Software Slow Down
DISPENSING	Based On Barcode Online Indent , Physically Dispensed	Inaccurate Dose Calculations
ADMINISTRATION	Medication Administration Records	Lack Of Mechanism To Counter Back The Drug
MONITORING	Regular Reporting	Done By Nurse

GRAPHICAL ANALYSIS

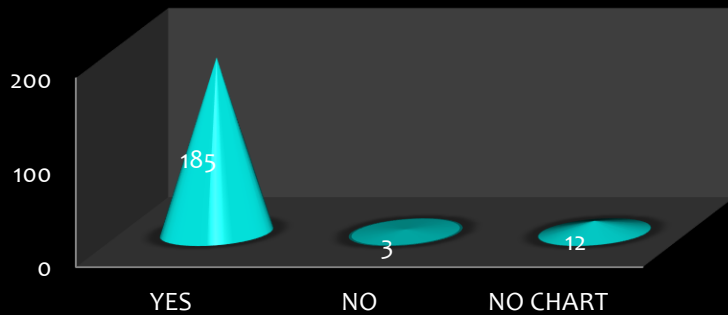


The graph above here is showing that 82 % of the prescription is having the medicine that is legible and 2% of the medicines are not legibly written by the doctors.

In the graph below here showing that the medicine written in capital letter is 47.5% and not written in capital is 46.5 % which leads to high number of prescription errors.



GRAPHICAL ANALYSIS

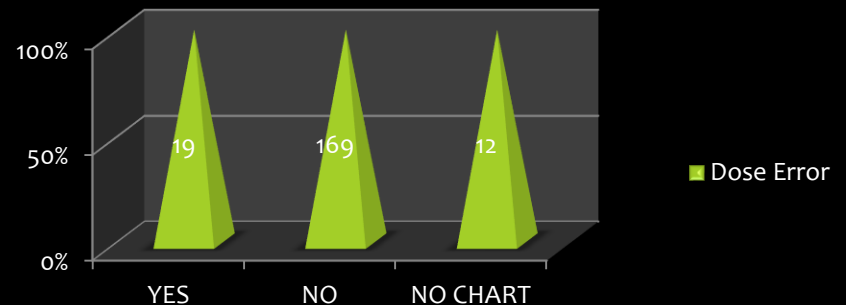


■ Start Date & Time

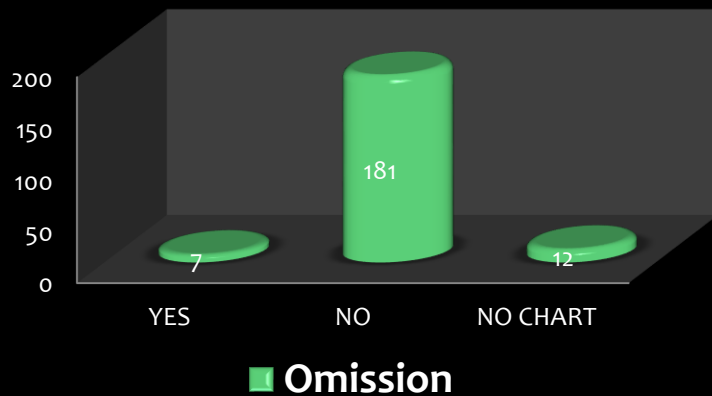
The graph above is showing that 92.5 % amongst 200 case sheets , the start date and time are mentioned and rest 1.5 % there is no presence of start date and time.

The graph below is showing that there is presence of 9.5 % dose error amongst 200 samples and no errors is 84.5 % by the doctors advise.

Dose Error

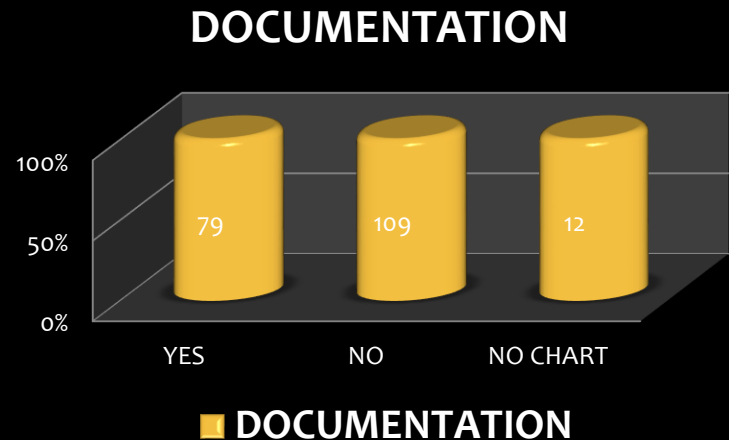


GRAPHICAL ANALYSIS



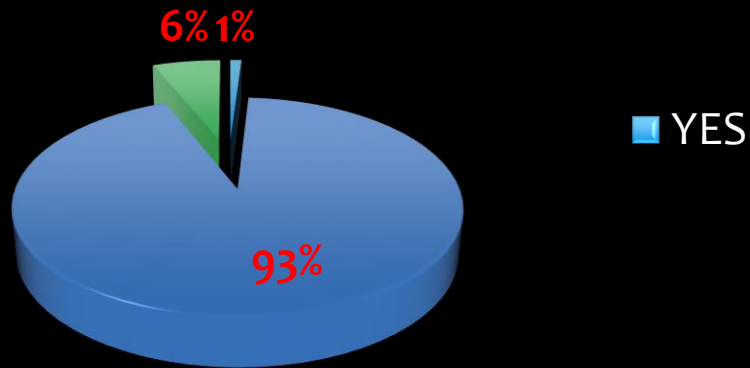
The above graph shows that there is 3.5% of omission error where the drug is not available or there may be the skip of dosage. 90.5% of the case sheets reflects that there is no omission error.

The graph below is showing here documentation error which includes use of error prone abbreviations. The documentation error present is 39.5 % and rest 54.5% there is no documentation error.



GRAPHICAL ANALYSIS

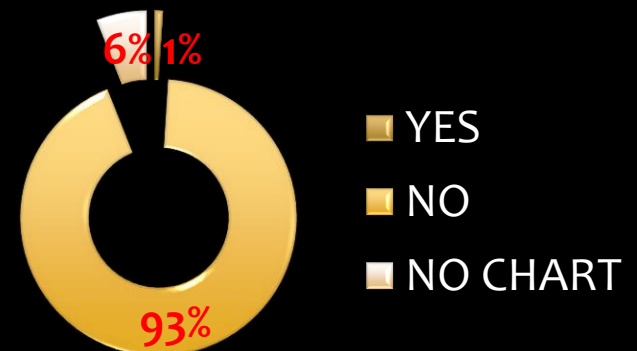
Frequency error



The above graph here shows that there are 2 cases of frequency error amongst 200 cases and no error in time is 182 cases.

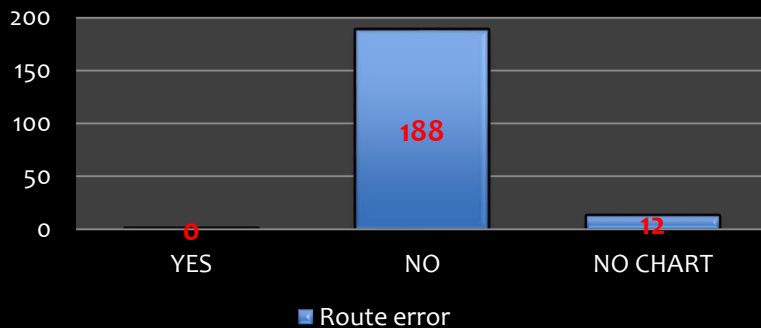
The below graph here shows that there are 2 cases of time error amongst 200 cases and no error in time is 182 cases.

Time error



GRAPHICAL ANALYSIS

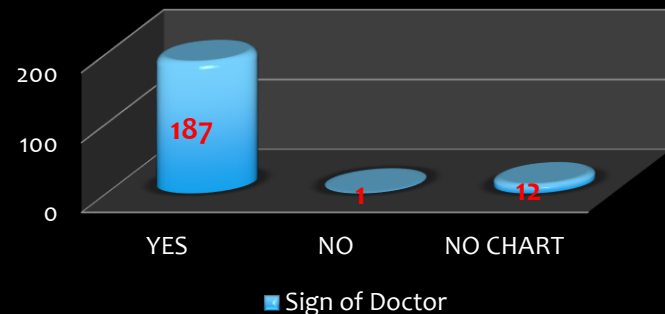
Route error



In the above graph we can see that there is 0% of route error and 94 % of no route error is not practiced while administering the drugs to the patient by the nurses.

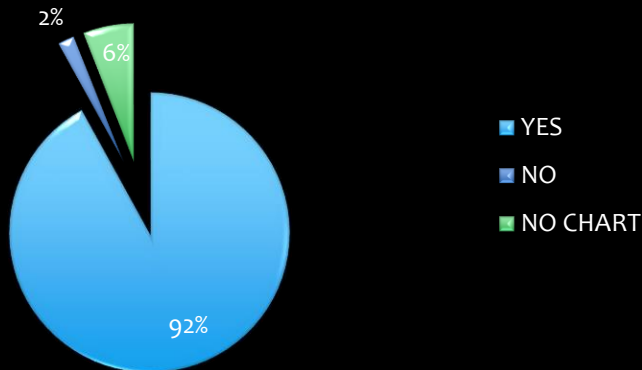
The graph below reflects that there is 0.5 % of cases where the doctor's signature is not present and rest 93.5 % cases had doctor's signature in the case sheet of patients amongst 200 samples.

Sign of Doctor



GRAPHICAL ANALYSIS

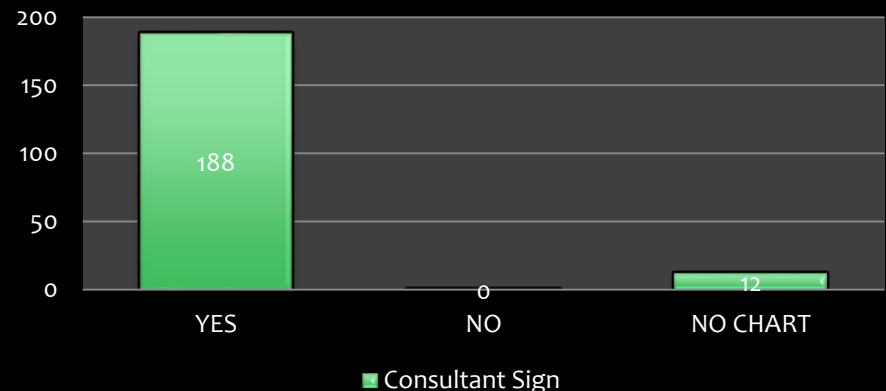
Signed by Nurse after giving Med



In the graph below we can see that there was 2% of cases where nurse's signature is not present after giving the medication. Rest 94% had their signature which leads to 0 error.

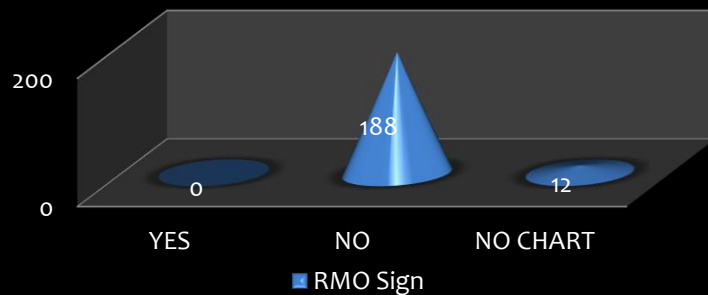
In the graph below we can see that there was 0% of cases where consultant's signature is not present. Rest 94% had their signature which leads to 0 error.

Consultant Sign



GRAPHICAL ANALYSIS

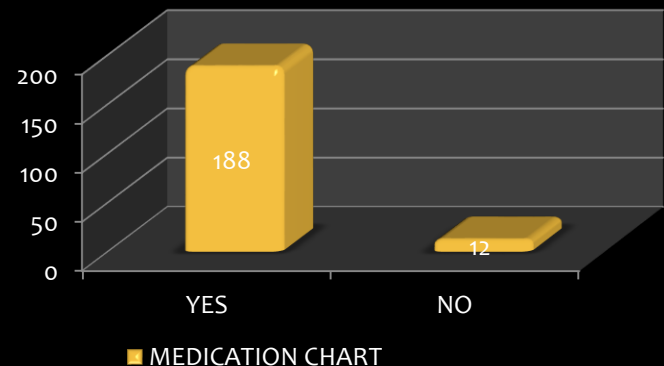
RMO Sign



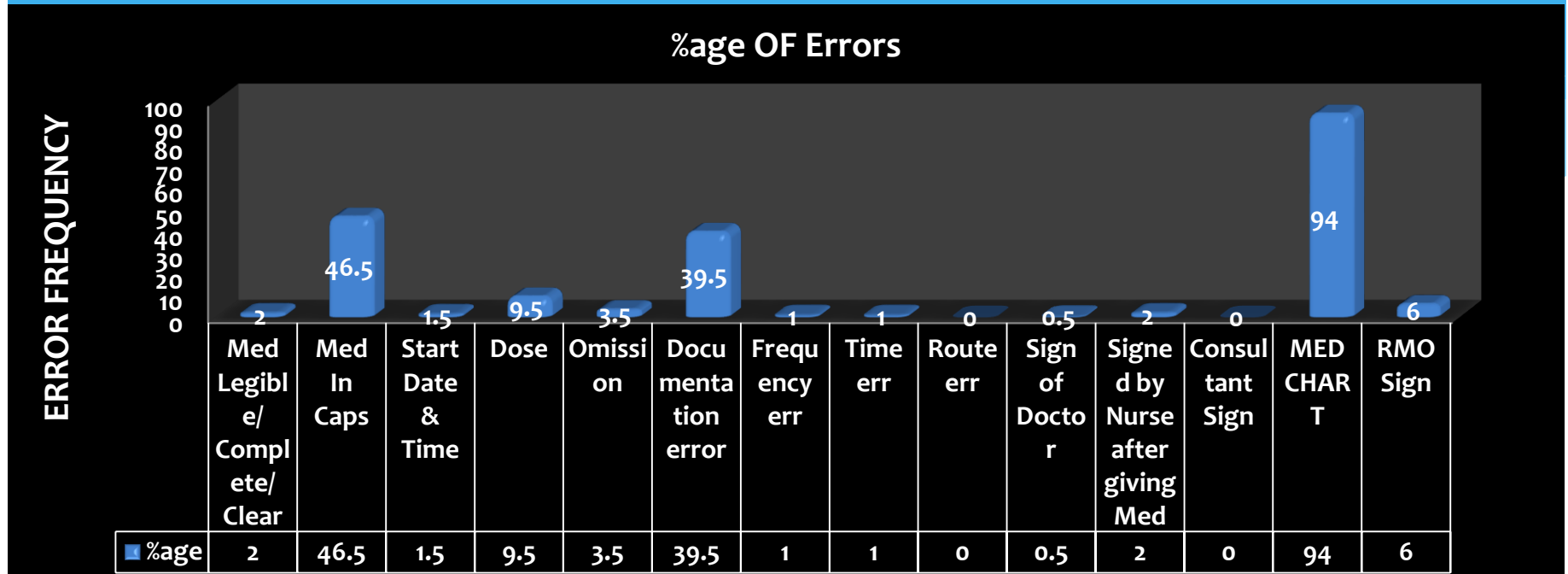
In the above graph it shows that there were 0 % of medication chart having the resident medical officer's signature . This is because the charts did not have any space for the signature , which should be present.

In the below graph it shows that there were 6% of cases where there was no presence of medication chart in the case sheets of patient. This was an exclusive case occurred only in M.I.C.U.

MEDICATION CHART



FINAL ANALYSIS



- In the above graph we can see that among the 200 samples the most occurring error is the 94% of the cases not having RMO'S signature.
- 46.5 % of the cases did not have medicine written in capital which is a negligence of doctor.
- 39.5 % of the cases documentation error which is again because of doctor using error prone abbreviations.
- 3.5% of omission that is due to non availability of drugs in pharmacy.

CONCLUSION

After completion of the study what i found is :

- * there is a lot of lack of knowledge among nurses and pharmacists which leads to negligence and medication error .
- * The usage of short names like mgso4 instead of medicine name leads to problem for nurses while transcribing the prescriptions at times.
- * Doctor's handwriting is illegible which is a very poor practise .
- * Unavailability of medicine is also an issue in the pharmacy. The stores are not being filled properly which leads to un-availability of drugs during emergency and also when patient requires them who are admitted in I.P.D.
- * There is a major issue of lack of staffs in pharmacy which results to work-load and turns ending to wrong dispensing of drugs in rush, like the look alike drugs, or missing writing the labelling of drugs in envelope .
- * shortage of nurses leads to work load pressure which results to delay in administering the drugs to the patients. Last but not the least dose error by doctors are found practised which is a result of careless behaviour.

SOLUTIONS :

- * Monthly Training for Pharmacy and Nurses. And Especially New Joiners.
- * Request Doctors for Writing Properly and In Capital and Full Forms.
- * Request For Online Prescription
- * Checking Of Re-Order Level.
- * Recruiting Of New Staffs.
- * Proper Rechecking Before Administration.

SUGGESTIONS AND RECOMMENDATIONS

- * Doctors should be sensitized continuously to avoid Prescription Error.
- * Nurses to be empowered to raise more of prescription error.
- * Regular audits of medication errors done by multidisciplinary team.
- * Use of drugs in generic name within the hospital formulary.
- * E-prescription to reduce prescribing error from illegible handwriting.
- * Required number of Pharmacists and Nurses to be recruited to reduce the workload error.
- * Nurses should be requested to follow the patient identification protocol before administering concerned medicine to the respective patient.
- * Dispensing error to be reduced by proper education to the pharmacists and providing with adequate stock to avoid error non availability of drugs respectively.
- * Adequate number of nurses and pharmacists along with health-care assistants should be made available to reduce work load.

BIBLIOGRAPHY

- * <https://www.ncbi.nlm.nih.gov/pubmed/26255621>
- * <https://onlinelibrary.wiley.com/doi/pdf/10.1111/jocn.12944>
- * <http://www.nccmerp.org/about-medication-errors>
- * <http://www.researchgate.com>
- * <http://www.amcp.org/WorkArea/DownloadAsset.aspx?id=9300>

